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10/050,063	01/14/2002	Joel A. Rosiene	ANTE-101.1(US)	1124

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KELLEY DRYE & WARREN LLP
400 ALTLANTIC STREET , 13TH FLOOR
STAMFORD, CT 06901

EXAMINER	
ROBERTS, JESSICA M	

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/050,063	ROSIENE ET AL.	
	Examiner	Art Unit	
	JESSICA ROBERTS	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement of Amendments

Status of Claims

Claim 5 in the previous office action has been cancelled. Claims 1-12 are currently pending.

Response to Arguments

Applicant's arguments file on 01/22/2008 have been fully considered but they are persuasive.

With respect to Applicant's argument regarding Udagawa fails to teach a sensor array comprising a first sensor incorporating X time Y pixels for sampling focused light and a second sensor incorporating X/2 time Y/2 pixels for sampling defocused light.

The examiner respectfully disagrees.

Udagawa teaches the focus evaluation value obtained by the focus is transmitted to the system controller **214,** and the system controller **214** controls the focusing lens driver **21,** through the focus controller **215,** to drive the focusing **21** as to move in the direction in which the focus evaluation value increases. The lens position detector **217** is for detecting the position of the focusing lens system **21,** and the output from the lens position detector **217** is fed back to the focus controller **215.** The aforesaid operation is repeated, and when the focus evaluation value outputted from the focus detector **211** reaches the maximum, then the focusing operation is complete (column 13 line 23-34 and fig. 19). Further, taught is the image sensing device **25** shifts on a plane which is perpendicular to the optical axis by the pixel shifting unit **26** (column 12 line 38-40).

Therefore, it is clear to the examiner that Udagawa encompasses more than one sensor as disclosed to focused and de-focused light.

With respect to applicants argument regarding that a *prima facie case* of obviousness has not been established for claims 1, 4, and 6-12.

The examiner respectfully disagrees.

1. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Udagawa with Kilgore's teaching of comparison function for providing correction terms used for processing images (abstract).

With respect to applicants argument regarding Udagawa and Kilgore does not provide teachings or suggestions of the use of two sensors having a specified ratio between the number of pixels in each, nor that one of the sensors is used exclusively to capture a focused image and the second image sensor used exclusively to capture the de-focused image.

The examiner respectfully disagrees.

Please see response above.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., one of the sensors is used exclusively to capture a focused image and the second image sensor used exclusively to capture the de-focused image) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, applicants argument is directed towards new matter. The use of ***"exclusively"*** and ***"only"*** (emphasis added), is not supported in the specification, and is not a claimed limitation.

With respect to applicants arguments regarding there is no defined ration of pixels between the sensors nor is the image focused on one sensor and de-focused on the other.

The examiner respectfully disagrees.

Udagawa teaches the focus evaluation value obtained by the focus is transmitted to the system controller **214,** and the system controller **214** controls the focusing lens driver **21,** through the focus controller **215,** to drive the focusing **21** as to move in the direction in which the focus evaluation value increases (column 13 line 23-28). Therefore, it is clear to the examiner that Udagawa encompasses more than one sensor as disclosed for focused and de-focused light.

Peters discloses light from a image is incident on lens, which focuses light onto beam – splitter **802.** Beam splitter, splits the image into three copies, directing one of the three copies to each of image sensors, **804a, 804b, 804c**, column 23 line 7-12).

Therefore, it is clear to the examiner since Udagawa teaches to determine focus and un-focuses light and Peters discloses a beam splitter, to split the image into three copies, it is clear to the examiner that the combination of Udagawa and Peters discloses the claimed limitation.

With respect to applicants arguments that a *prima facie case* of obviousness has not been established for claims 2 and 3.

The examiner respectfully disagrees.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious at the time of the invention to combine the teachings of Udagawa and Kilgore with Peters beam splitter because it is a crucial part of most interferometers that require precise measurement of indices of refraction.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claim 1,6, and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al., US-6, 195,125 and in view of Kilgore et al., US-5,903,659 .

Regarding **claim 1,** An opto-electronic video compression system, comprising: a lens element for transmitting light of an image and having one or more lenses (fig. 19, 21 and 22), each lens having a predetermined focal length (it is well known that lens have predetermined focal lengths); a sensor array including a first sensor for receiving focused light from the lens element (fig. 19, 21) and a second sensor for receiving defocused light from the lens element (fig.19, 22), wherein the first sensor includes X.times.Y pixels and samples the focused light at each of the X.times.Y pixels, and the second sensor includes X/2.times.Y/2 pixels and samples the defocused light at each of the X/2.times.Y/2 pixels (fig. 3A- to 3F, column 6 line 15 to 61). Udagawa is silent in regards to an electronic differencing element in communication with the first and second sensor for differencing the coefficients of co-located pixels.

However, Kilgore teaches a comparison function that includes for each value of the anti-mean (focus) is compared to the corresponding value of the anti-mean image (blur), column 6 line 4-15, fig. 5, 24 B2).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to combine the teachings of Udagawa with Kilgore's teaching of a comparison function for providing correction terms used for processing images (abstract).

Regarding **claim 6,** the combination of Udagawa and Kilgore teaches everything as claimed above, see claim 1. In addition, Udagawa teaches the opto-electronic video compression system of claim 1, wherein the lens element includes multiple lenses (fig. 19, 21, 22).

Regarding **claim 8,** the combination of Udagawa and Kilgore as whole teaches everything as claimed above, see claim 1. In addition, Udagawa teaches the opto-electronic video compression system of claim 6, wherein each lens has different focal lengths and the sensor is a planer sensor (Fig. 19, 21, 22 and focus controller).

4. **Claims 2-3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al., US-6, 195,125 and in view of Kilgore et al., US-5,903,659 and in further view of Peters et al., US- 5,541,653.

Regarding **claim 2,** the combination of Udagawa teaches the opto-electronic video compression system of claim 1, wherein the lens element includes a single lens (lens system, fig.1). However, Udagawa is silent in regard to including a beam splitter between the lens element and the sensor array for transmitting a first percentage of the

light from the image to the first sensor and a second percentage of the light from the image to the second sensor.

However, Peters discloses a beam splitter between the lens element and the sensor array for transmitting a first percentage of the light from the image to the first sensor and a second percentage of the light from the image to the second sensor (Peters, light from an image is incident on lens, which focuses light onto beam-splitter 802. Beam splitter, 802 splits the image into three copies, directing one of the three copies to each of image sensor, 804a, 804b, and 804c, column 23 line 7-12).

Therefore, it would have been obvious at the time of the invention to combine the teachings of Udagawa and Kilgore with Peters beam splitter because it is a crucial part of most interferometers that require precise measurement of indices of refraction.

Regarding **claim 3,** the combination of Udagawa and Kilgore as a whole teaches everything as claimed above, see claim 1. In addition, Udagawa teaches the opto-electronic video compression system of claim 1, wherein the lens element includes a single collimated lens (column 13 line 23-31 and fig. 19, 215- 217). Further Udagawa teaches the quantity of light of luminous flux which is passed through the focusing lens system for controlling focus is controlled by the iris diaphragm, further passes through the lens and the optical LPF, then forms an image (column 12 line 27-31) which reads upon the receiving focused and defocused light.). Udagawa is silent in regards to further including a beam splitter between the lens element and the sensor array for transmitting a first percentage of the light from the image to the first sensor and a second

percentage of the light from the image to the second sensor, and further including a first lens between the beam splitter and the first sensor for providing the focused light on the first sensor, and a second lens between the beam splitter and the second sensor for providing the defocused light on the second sensor.

However, Peters discloses including a beam splitter between the lens element and the sensor array for transmitting a first percentage of the light from the image to the first sensor and a second percentage of the light from the image to the second sensor (Peters, light from an image is incident on lens, which focuses light onto beam-splitter 802. Beams splitter, 802 splits the image into three copies, directing one of the three copies to each of image sensors, 804a, 804b, and 804c, column 23 line 7-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Udagawa with Peters' teaching of beam splitter between image sensors because it is a crucial part of most interferometers that require precise measurement of indices of refraction.

5. **Claims 4** and **7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al., US-6, 195,125 and in view of Kerstens et al., US-5,248,876.

Regarding **claim 4,** the combination of Udagawa and Kilgore as whole is silent in regards to the opto-electronic video compression system of claim 1, wherein the sensor array is a stepped array.

However, Kerstens teaches a stepped array (fig. 11, 300 and 306).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Udagawa and Kilgore with Kerstens' teaching of using a sensor mask to provide complete images and height measurements, and inspection (column 1 line 7-11).

Regarding **claim 7,** the combination of Udagawa and Kilgore are silent in regards to the opto-electronic video compression system of claim 6, wherein each lens has the same focal length and the sensor is a stepped sensor.

However, Kertsens discloses a that since a stepped sensor array is not commercially available, therefore a sensor mask 306 which is a mirror image of source mask 300, and a focusing lens 308 are provided. The reflected rays are deflected by the beam splitter 106 through an optically aligned sensor mask 306 having steps with aperture matrices which are a mirror image of the pattern of the source mask. The rays are focused by lens 308 onto the sensor array 116. Signals from the sensor array 116 are directed to an electronic processor 118 as shown in FIG. 1 and arranged to form images as described above, which read upon the claimed limitation of a stepped sensor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Udagawa and Kilgore with Kerstens' teaching of using a sensor mask to provide complete images and height measurements, and inspection (column 1 line 7-11).

6. **Claims 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al., US-6, 195,125 and in view of Kilgore et al., US-5,903,659 and further in view of Blaettermann et al., US-2003/0142869.

Regarding **claim 9**, the rejection and analysis made for claim 5, also apply here as claim 5 and claim are essentially the same. Therefore, claim 9 is rejected with respect to claim 5.

Regarding **claim 10,** the combination of Udagawa and Kilgore are silent in regards to the opto-electronic video compression system of claim 9, wherein the quantizer coefficient is programmable.

However, Blaetternmann teaches a second stage in data reduction takes place in the form of an adaptive quantizing ([0006]), which reads upon the limitations as claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Udagawa and Kilgore with Blaettermanns' teaching of adaptive quantization to provide efficient encoding and decoding of images.

Regarding **claim 11,** the combination of Udagawa and Kilgore as a whole are silent in regards to the opto-electronic video compression system of claim 9, wherein the electronic quantizing element is a programmable attenuation circuit.

However, Blaettermann teaches a reduction of takes place in the form of an adaptive quantizing, by means of which the amplitude accuracy of the coefficients is further

reduced or by means of which the small amplitudes are set to zero ([0006]). Further, it is clear to the examiner that a programmable attenuation circuit is nothing more than a component to reduce the signal, which is disclosed by Blaettermann.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Udagawa and Kilgore with Blaettermanns' teaching of reduction of takes place in the form of an adaptive quantizing, by means of which the amplitude accuracy of the coefficients is further reduced or by means of which the small amplitudes are set to zero to provide for efficient encoding and decoding of images.

7. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al., US-6, 195,125 and in view of Kilgore et al., US-5,903,659 and further in view of Blaettermann et al., US- and further in view of Tewksbury et al., US-4, 107,669.

Regarding **claim 12,** the combination of Udagawa, is silent in regards to including a model in communication with the electronic quantizing element and a second electronic differencing element in communication with the electronic quantizing element and the model for calculating the difference between a coefficient and a co-located coefficient from the model.

However, Kilgore teaches a comparison function that includes for each value of the anti-mean (focus) is compared to the corresponding value of the anti-mean image (blur), column 6 line 4-15, fig. 5, 24 B2), which reads on the limitation.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to combine the teachings of Udagawa with Kilgore's teaching of a comparison function for providing correction terms used for processing images (abstract).

The combination of Udagawa and Kilgore as a whole are silent in regards to the opto-electronic video compression system of claim 1, further including an electronic quantizing element, for dividing coefficients received from the electronic differencing element by a predetermined quantizer coefficient..

However, Blaettermann teaches quantizing the image ([0006] and fig. 1,104). Further, it is clear to the examiner that a coefficient is quantized by dividing it by a weight and then rounding or truncating the result, which reads upon the claimed limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Udagawa and Kilgore with the teachings of Blaettermann to provide efficient encoding and decoding of images.

However, the combination of Udagawa, Kilgore and Blaettermann as a whole are silent in regards to a second differencing circuit.
However, Tewksbury discloses the use of two differencing circuits, 704 and 705 that are in communication with the quantizer (fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Udagawa, Kilgore, and Blaettermann with the teachings of Tewksbury second differencing circuit to retain the signal

independent feedback network as in video coders, while achieving a much greater reduction in the number of required quantization levels (column 1 line 58-61).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Examiner's Note

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert.

denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Roberts whose telephone number is (571) 270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

Contact

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

//Jessica Roberts/
Examiner, Art Unit 2621
04/10/2008

/Marsha D. Banks-Harold/

Supervisory Patent Examiner, Art Unit 2621